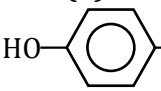


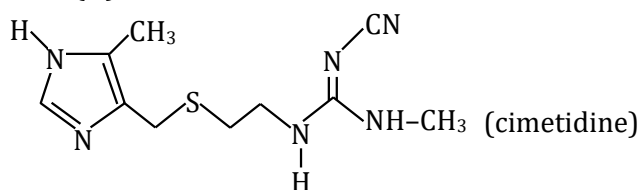
Chemistry in Everyday Life

SOLUTIONS

EXERCISE - O

1. **Ans. (B)**
Analgesic
2. **Ans. (B)**
N-Acetyl-para-aminophenol is the chemical name of paracetamol.
3. **Ans. (A)**
As NaHCO_3 is used in medicine to, neutralise the acidity in stomach and Mg(OH)_2 dissolves in acids forming corresponding salts. So, both of these are used in anti-acid medicinal preparation
4. **Ans. (C)**
 on acetylation gives paracetamol.
5. **Ans. (B)**
Saccharin is about 300 times sweeter than sucrose.
Alitame is about 2000 times sweeter than sucrose.
Sucralose is about 600 times sweeter than sucrose.
Aspartame is about 180 times sweeter than sucrose.
6. **Ans. (D)**
Alkyl benzenesulphonates derived from branched chain alkanes have much lower biodegradability
7. **Ans. (B)**
Surfactants have a polar group and nonpolar hydrocarbon part. Option (b) is wrong.
8. **Ans. (D)**
Antipyretic
9. **Ans. (B)**
Paracetamol
10. **Ans. (A)**
Ampicillin
11. **Ans. (A)**
Both antipyretic and analgesic
12. **Ans. (C)**
Sulphanilamide
13. **Ans. (A)**
Insulin
14. **Ans. (B)**
Aspirin
15. **Ans. (C)**
Syphilis
16. **Ans. (B)**
m-hydroxybenzoic acid

17. **Ans. (C)**
Antibiotic
18. **Ans. (B)**
Drug which can block the binding site of the enzyme and prevent the binding of substrate or inhibit the catalytic activity of the enzymes, are called enzyme inhibitors.
19. **Ans. (A)**
Drugs available for the treatment of a particular type of a problem is classified on the basis of pharmacological effect.
20. **Ans. (D)**
Substrates bind to the site of the enzyme through interactions like ionic bonding, hydrogen bonding, Van der Waals interaction and dipole-dipole interactions.
21. **Ans. (B)**
Histamine is a potent vasodilator but not antihistamine.
22. **Ans. (D)**
Antihistamines drugs are used to cure inflammation and allergy in the body.
23. **Ans. (D)**



It contains cyanide, guanidine and secondary amine groups.

24. **Ans. (B)**
Compounds & drugs contain phenolic OH group give violet-blue colour on reaction with FeCl_3 ; as they formed coloured complex with neutral FeCl_3 solution.
25. **Ans. (C)**
Some tranquilizers namely : Chlordiazepoxide, meprobamate, equanil are used in controlling depression & hypertension.
26. **Ans. (A)**
$$(\text{C}_{15}\text{H}_{31}\text{COO})_3\text{C}_3\text{H}_5 + 3\text{NaOH} \rightarrow (\text{C}_{15}\text{H}_{31}\text{COONa})_3 + \text{Glycerol}$$

(Glyceryl palmitate)

(Sodium palmitate)
27. **Ans. (A)**
Anionic detergents are sodium salt of sulphonated long chain alcohols or hydrocarbons. e.g. Sodium lauryl sulphate, sodium dodecyl benzene sulphonate.
28. **Ans. (A)**

Column I (Chemotherapeutic agents)		Column II (Examples)	
1.	Antibiotic	(c)	Chloramphenicol
2.	Antiseptic	(a)	Chloroxylenol
3.	Analgesic	(d)	Diclophenac sodium
4.	Tranquilizer	(e)	Veronal
5.	Antihistamine	(b)	Chloropheniramine

- 29. Ans. (BD)**
(B) The active site of receptor proteins opens on the outside region of the cell membrane.
(D) To accommodate a messenger, shape of the receptor site changes.

30. **Ans. (BC)**

CHI_3 , iodoform is used as an antiseptic for wounds. Boric acid in dilute aqueous solution is weak antiseptic for eyes 0.3 ppm aqueous solution of Cl_2 is disinfectant.

31. **Ans. (CD)**

Penicillin is bactericidal (has killing effect) and it is a narrow spectrum antibiotic.

32. **Ans. (AD)**

Ranitidine and cimetidine are used as antacids.

33. **Ans. (ACD)**

Barbiturates such as seconal, luminal and veronal are hypnotic sleep producing drug while, serotonin is non-hypnotic drug

34. **Ans. (BCD)**

Ofloxacin, aminoglycosides and chloramphenicol are broad spectrum antibiotics while penicillin is a narrow spectrum antibiotics.

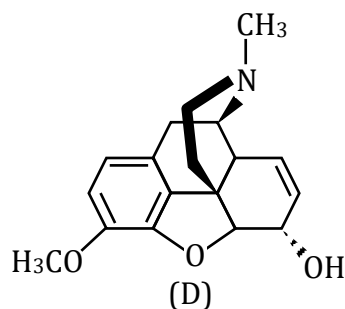
35. **Ans. (BD)**

(B) Sodium hydrogen carbonate is not used as a preservative.

(D) Sodium benzoate is used as preservative (not benzoic acid).

EXERCISE - S

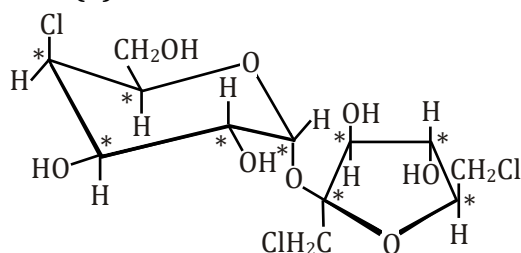
1. **Ans. (1)**



2. **Ans. (12)**

$\text{CH}_3(\text{CH}_2)_{10}\text{CH}_2\text{OSO}_3\text{Na}$ (Sodium laurylsulfate)

3. **Ans. (9)**

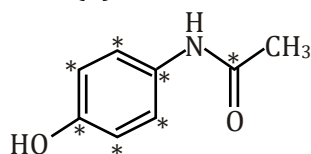


Number of chiral atoms in sucralose is 9.

4. **Ans. (4)**

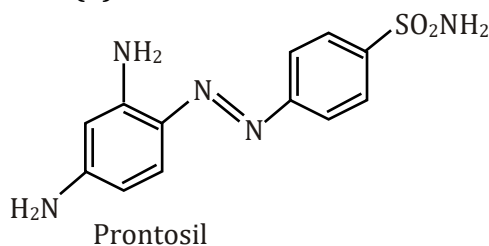
Veronal, Equanil, Iproniazid, Phenelzine are tranquilizer drugs, rest belongs to other categories.

5. **Ans. (7)**



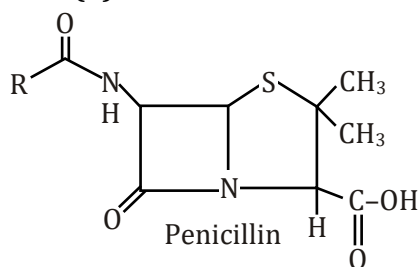
Starred carbon are sp^2 hybrid = 7.

6. **Ans. (5)**



Number of nitrogen atoms in one molecule of Prontosil = 5

7. **Ans. (5)**



Degree of unsaturation of penicillin = 5 [3 π bonds + 2 rings]

EXERCISE - JEE (Main) PYQ

1. **Ans. (4)**

Penicillin G following is a narrow spectrum antibiotic

2. **Ans. (2)**

Factual

3. **Ans. (2)**

Theoretical

4. **Ans. (1)**

Butylated hydroxyl anisole is an antioxidant.

5. **Ans. (3)**

An antibiotic should not promote growth or survival of microorganisms. Antibiotics should inhibit growth of microbes.

6. **Ans. (4)**

Theory based.

7. **Ans. (2)**

Antiallergic and antacid drugs work on different receptors

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8. **Ans. (1)**

1. Ranitidine: Antacid

2. Meprobamate: Tranquilizer

3. Terfenadine: Antihistamine

4. Brompheniramine: Antihistamine

9. **Ans. (1)**

Veronal is neurological medicine, Prontosil is antibiotic, rest all are disinfectants.

10. **Ans. (3)**

(chlorodiazepoxide, Veronal, Valium is tranquilizer where as salvarsan is antibiotic.

11. **Ans. (3)**

NCERT (Chemistry in every day life)

12. **Ans. (1)**
Fact
13. **Ans. (4)**
Theoretical, NCERT based.
14. **Ans. (1)**
(A) Narrow spectrum antibiotic–penicillin-G
(B) Antiseptic–Furacine
(C) Disinfectants–sulphur dioxide
(D) Broad spectrum antisiotics–chloramphenicol
15. **Ans. (2)**
Calcium plays important role in neuromuscular function, interneuronal transmission, cell membrane etc.
16. **Ans. (4)**
Factual
17. **Ans. (4)**
Statement-I- Morphine relieves in pain and produce sleep (incorrect)
Statement-II – Correct
18. **Ans. (4)**
(A) Saccharin II. First artificial sweetener
(B) Aspartame IV. Unstable at cooking temperature
(C) Alitame I. High potency sweetener
(D) Sucralose III. Stable at cooking temperature
19. **Ans. (4)**
Drugs that bind to the receptor site and inhibit its natural function are called antagonists
20. **Ans. (2)**
Saponification: Alkaline hydrolysis.

JEE (Advanced) Practice Paper

1. **Ans. (C)**
Cetyltrimethylammonium bromide is a cationic detergent that is used in hair conditioners due to its germicidal properties.
2. **Ans. (C)**
cis isomer of Platin ($\text{Pt}(\text{NH}_3)_2\text{Cl}_2$) is used as an anticancer drug
3. **Ans. (AD)**
Morphine and heroin are narcotic analgesic.
4. **Ans. (BD)**
Aspirin is used as analgesic as well as antipyretic.
5. **Ans. (ABC)**
PAS, INH and streptomycin are used for treatment of tuberculosis.

6. **Ans. (B)**

Equanil is not a derivative of barbituric acid.

7. **Ans. (A)**

Heroin is the narcotic analgesics while of the three are non-narcotic analgesics.

8. **Ans. (D)**

All are antibacterials.

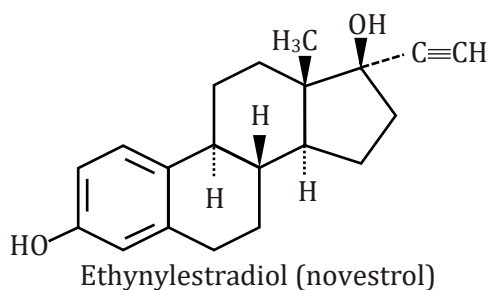
9. **Ans. (C)**

The bactericidal and bacteriostatic antibiotics, respectively, are Penicillin, chloramphenicol.

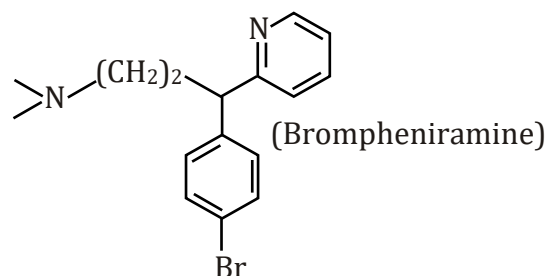
10. **Ans. (B)**

Reserpine is extracted from the plant Rauvolfia serpentina.

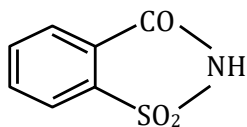
11. **Ans. (2)**



12. **Ans. (2)**



13. **Ans. (7.65)**



Molecular formula = $C_7H_5O_3SN$

Molecular mass = 183

Mass % of nitrogen = $\frac{14}{183} \times 100 = 7.65$